

Not only has there been a decline in "tar" yield, but according to our biological studies, there appears to have been also a reduction in tumor yield, when comparing "tars" on a gram to gram level (Fig. 9). This reduction parallels a reduction in benzo(a)pyrene content of "tars". Experimental data suggest that the reduction in recent years of BaP and other polynuclear aromatic hydrocarbons is largely due to more "combustible" types of cigarettes. (12).

A reduction of tumorigenic activity as well as a reduction of carcinogenic PAH can be accomplished through the addition of alkali nitrates to tobacco, or the selection of nitrate rich tobacco leaves (Fig. 10). Reduction of tumorigenic activity has also been shown for "tars" obtained from cigarettes made entirely of tobacco stems (Fig. 11). This observation may be accounted for by the relatively high content of cellulose in tobacco stems and practical absence of polyphenols and terpenes. Preliminary short term studies with "tars" obtained from smoking cigarettes made of different cellulose derivatives suggest that the tumor promoting activity of such materials is quite low.

Experimentally then, we have shown a reduction in "tar" yield in the mainstream smoke of current day cigarettes compared to those smoked twenty years ago, a selective change in cigarettes, as well as in "tar" derived from smoking them. One might, therefore, predict that individuals smoking current day cigarettes have to smoke more of these cigarettes than those smoked twenty years ago to insure the same risk to develop lung cancer.

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